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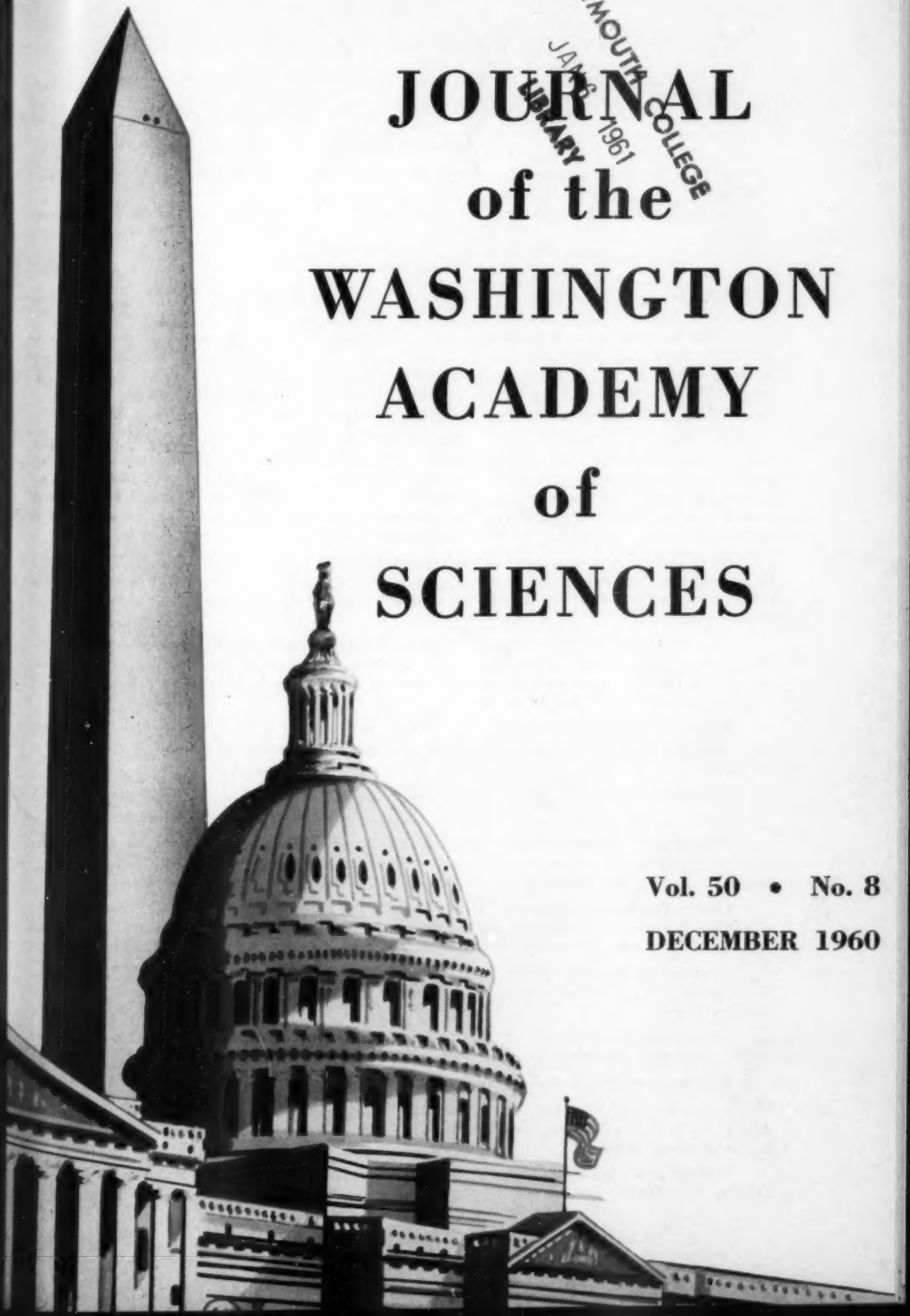

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JOURNAL OF THE WASHINGTON ACADEMY OF SCIENCES

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This Journal, the official organ of the Washington Academy of Sciences, publishes: (1) historical articles, critical reviews, and scholarly scientific articles, (2) original research, if the paper, including illustrations, does not exceed 1500 words or the equivalent space, (3) notices of meetings and proceedings of meetings of the Academy and its affiliated societies, and (4) regional news items, including personal news, of interest to the entire membership. The Journal appears eight times a year in January to May and October to December.

Manuscripts and original research papers should be sent to the Editor. They should be typewritten, double-spaced, on good paper; footnotes and captions should be numbered and submitted on a separate sheet. The Editor does not assume responsibility for the ideas expressed by any author.

Contributions to the regular columns should be sent to the appropriate Associate Editor whose name appears at the beginning of each column, or to one of the Contributors, listed above. The deadline for news items is approximately three weeks in advance of publication date. News items should be signed by the sender.

Proof of manuscripts will generally be sent to an author if he resides in the Washington area and time allows. Otherwise the Editor will assume responsibility for seeing that copy is followed.

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Science in Washington

SCIENTISTS IN THE NEWS

This column will present brief items concerning the activities of members of the Academy. Such items may include notices of talks given, important conferences or visits, promotions, awards, election to membership or office in scientific and technical societies, appointment to technical committees, civic activities, and marriages, births, and other family news. Formal contributors are being assigned for the systematic collection of news at institutions employing considerable numbers of Academy members (see list on masthead). However, for the bulk of the membership, we must rely on individuals to send us news concerning themselves, and their friends. Contributions may be addressed to ***Harold T. Cook, Associate Editor, U. S. Department of Agriculture, Agricultural Marketing Service, Room 3917 South Building, Washington 25, D. C.***

GEOLOGICAL SURVEY

Dean S. Carder, chief seismologist, attended the second conference of Joint Working Group No. 16 (CJOWOG-16), London and Aldermaston, England, September 19-23, 1960, and consulted geophysicists in Cambridge. The CJOWOG-16 consists of English and American geophysicists. Its function is the detection of clandestine nuclear explosions. Dr. Carder presented illustrations showing traces of seismograms from underground nuclear explosions and from comparable earthquakes.

Raymond L. Nace attended the Annual Information Meeting of the Health Physics Division. Oak Ridge National Laboratory, October 27 and 28.

Clarence S. Ross attended the Ninth Annual Conference on Clays and Clay Minerals, Purdue University, Lafayette, Indiana, October 5-8. He reported on the discussion on clay mineral nomenclature of C.I.P.E.A. in Copenhagen, Denmark, in August.

GEORGE WASHINGTON UNIVERSITY

Harold G. Mandel, professor of Pharmacology, has been named Executive Officer of that department in the School of Medicine. He succeeds the late **Paul K. Smith.**

Benjamin D. Van Evera, with Mrs. Van Evera, has returned from a nine-week holiday trip in Europe this past summer. Dr. Van Evera attended the American Council on Education meetings in Chicago, October 6-7.

HOWARD UNIVERSITY

Kelso B. Morris has taken a second year's leave of absence to serve as visiting professor of chemistry at the Air Force Institute of Technology, Wright-Patterson Air Force Base.

Lloyd N. Ferguson served as visiting professor of chemistry at the University of Oregon, Summer, 1960.

NATIONAL BUREAU OF STANDARDS

Allen V. Astin, NBS Director, was awarded a lifetime Honorary Membership by the Instrument Society of America. This is the highest honor of the Society and Dr. Astin is the eighth man to receive this distinction since the society was founded in 1946.

Harry A. Bright (Ret.) received the Anachem Award of the Association of Analytical Chemists at Detroit, Michigan, on October 25, 1960. The award is presented annually for outstanding achievement in analytical chemistry. Following the presentation Mr. Bright spoke on "NBS Standards—Past Forty Years in Retrospect."

USDA, BELTSVILLE

Lawrence Zeleny recently returned from an extended foreign trip which included a month in the USSR as a member of a U. S. Scientific Exchange team studying grain handling, storage, and processing in the Soviet Union.

James H. Turner received the Brayton Howard Ransom Memorial Award for "meritorious service to Parasitology and related Sciences" at the 50th Anniversary meeting of the Helminthological Society of Washington, October 8, 1960. This marks the first time the award has been presented.

Edna M. Buhrer received "The Anniversary Award of the Helminthological Society of Washington" at the 50th Anniversary meeting of the Society October 8, 1960. The award is "in recognition of distinguished contributions and service toward achievement of the Society's aims and objectives." The "Anniversary Award" was established at this time, and is to be granted in the future, on anniversary dates, but not necessarily every year.

Ross W. Davidson reports that Dr. Kiyowo Aoshima, Government Forest Experiment Station, Tokyo, Japan, is in this country on a fellowship award and will be studying for six months at the Forest Disease Laboratory, Plant Industry Station.

Ross W. Davidson attended the annual New York State fall Mycological Foray at Paul Smiths, New York, October 9 and 10.

E. E. Wehr presented papers on "Further observations on the life history and development of *Ascaridia columbae* (Gmelin, 1790) Travassos, 1913, in the pigeon" and "Occurrence of *Capillaria obsignata* Madsen, 1945, in the peafowl and its transmission to chickens" at the 34th Annual Meeting, American Society of Parasitologists, University Park, Pa. Dr. Wehr also attended the 11th World Poultry Congress in Mexico City, Mexico, and presented a paper on "Glimpses into poultry parasite problem in the United States."

USDA, WASHINGTON

Joseph R. Spies presented a paper, "Allergenic proteins from oilseeds," at the Eastern Experiment Station Collaborators' Conference on Proteins, U. S. Department of Agriculture, Eastern Utilization Research and Development Division, Philadelphia, Pa., October 26, 1960.

Benjamin Schwartz attended the First International Conference on Trichinosis in Warsaw, Poland, September 12 and 13, as a consultant in parasitology to Federal meat inspection. The conference designated Dr. Schwartz, who read a paper on "Trichinosis in the United States," chairman of an international committee charged with the responsibility of organizing a second international conference on Trichinosis to be held in 1962, encouraging research on this parasitic disease of animals and man, making a study of the prevalence and host relationship of trichinae throughout the world, and stimulating efforts leading to the ultimate eradication of these nematodes. Other members of the committee are one representative each from France, West Germany, USSR, and the United States.

NATIONAL SCIENCE FOUNDATION

Raymond J. Seeger, deputy assistant director for Mathematics, Physical and Engineering Sciences, gave the 1960 James Mapes Dodge Lecture for Young People at the Franklin Institute in Philadelphia on Nov. 1 and 2. His lecture was entitled "Faster than sound."

DEATHS

Paul K. Smith, Professor of Pharmacology, George Washington University since 1946, died on October 6 at the age of 52.

AFFILIATED SOCIETIES

Acoustical Society of America, Washington D.C. Chapter

The November meeting, on Monday the 14th, featured a presentation by Dr. Cyril Harris, Columbia University, on "Some impressions of acoustics in Japan."

American Institute of Electrical Engineers, Washington Section

Dr. William B. Kouwenhoven, for many years a member of the faculty of the Johns Hopkins University, spoke on November 9 on the topic, "The effect of electric current on humans," dealing, among other things, with techniques for restoring normal heart function after electric shock.

The monthly bulletin reports local efforts to raise funds toward the twenty story Engineering Center now being erected in New York city to house the major engineering societies.

The Section is moving ahead on its program to organize technical groups within five basic divisions (communications; instrumentation and telemetry; transportation, industry and management; power; and science and electronics). The Instrumentation and Telemetry division held its first meeting on the 15th, featuring a talk by W. A. Geyger on magnetic amplifiers in instrumentation.

The Student Guidance Committee places most of its emphasis on cooperating through the Joint Board on Science Education to establish closer liaison between professional men and interested high school students. They point out, further, the desirability of offering summer employment to students and teachers.

American Society for Metals, Washington Chapter

Dr. Robert C. McMaster, Professor of Welding Engineering, spoke on December 12 on the subject of "Nondestructive testing." The program for January 9 will feature Fred D. Rosi, RCA, in a presentation on "Materials for auxiliary power energy conversion." It should be noted that the latter event, and subsequent meetings, will be held at the AAUW Headquarters, 2401 Virginia Avenue, N.W.

American Society of Civil Engineers, National Capital Section

On November 8 William N. Dripps, Dept. of Licenses and Inspections, gave a talk on "Building construction and inspection in the District Columbia."

December 29 is the date set for the annual Christmas party.

The Associate Member Forum is sponsoring a basic course in the use of electronic computers open to any member of the National Capital Section. It is scheduled to start in early December and to continue for about 12 weekly sessions, at a cost of $5.00 per registrant.

American Society of Mechanical Engineers, Washington Section

Wade S. Plummer, on November 10, discussed the modernization program in the Post Office Department, particularly the extensive introduction of mechanized and automated equipment, and showed a film entitled "Machines to move tomorrow's mail."

The schedule for December and January as presently arranged calls for a December 8 meeting on creative design (Mr. Jacob Rabinow), one on hydrofoils for January 12, and on aviation reliability, January 26 (John Coutinho).

Anthropological Society of Washington

The 1960-61 program will focus on anthropology and human behavior, with the twofold purpose of calling attention to current inquiry in psychology and related disciplines and of examining theory underlying two possible approaches to the study of culture. The series was introduced on October 18 by Dr. Thomas Gladwin, NIH. On November 15, Dr. Dell H. Hymes, University of California (Berkeley) dealt with "Speech and personality," and on December 20 Dr. Ulric Neisser, Brandeis University, discussed "Cognitive and cultural discontinuities."

Botanical Society of Washington

The annual business meeting and election of officers took place on December 6, at which time the retiring President, Dr. H. T. Cook, spoke on "Plant disease control without chemicals."

Chemical Society of Washington

The outgoing president of the Society, Dr. A. L. Alexander, speaks on January 12 concerning "Recent research on functional organic coatings."

At the October 18 meeting of the Board of Managers, it was reported by John Leonard of the Education Committee that lunch money and carfare was provided for 15 youngsters working in area laboratories during the summer.

The Society now numbers just under 2500 members, as judged by a newly assembled directory, which makes it the 8th largest of the local sections of the American Chemical Society. The *Capital Chemist* now has a circulation of 2725. The Public Relations Committee has not been successful in interesting local television stations directly in the affairs of the Society, but has received requests for assistance and advice in choosing programs.

Geological Society of Washington

At the first meeting of the fall season, K. J. Murata, USGS, presented color slides and motion pictures to document a description of the 1959-60 eruption of Kilauea. H. B. Stewart, Jr., of CGS, then described the formation and movement of submarine sand ridges off the New England coast in which he showed that Georges Shoal, 120 miles east of Cape Code, is topped by a swarm of elongate ridges rising to within two fathoms of the surface. Evidence suggests that these ridges have migrated westward for distances up to 900 feet since the 1931 survey. Despite almost constant transport of sediment there is no net movement resulting from tidal currents; the answer seems to lie in bottom oscillations induced by the predominantly westward-moving surface waves. This can be shown in motion pictures.

Insecticide Society of Washington

Two papers were given on November 16 at the regular meeting: Morris Alpert, Bureau of Ships, spoke on "Military requirements for military pesticides and how they are met"; Dr. Clyde S. Barnhart, U. S. Army, dealt with "New developments in pesticide dispersal equipment for military use."

International Association for Dental Research, Washington Section

Dr. Samuel Natelson, biochemist, Roosevelt Hospital, discussed the application of x-ray spectroscopy to analysis of elements in biological systems on November 7, specifically as the technique relates to phosphorus, sulfur, calcium, potassium, iodine, strontium and iron, in microgram quantities or less. A second paper, on studies related to carbohydrate metabolism in calcified tissues, was presented by Dr. Robert Van Reen, presently supervisory chemist at the Naval Medical Research Institute. Dr. Van Reen handled certain biochemical studies related to citric acid metabolism in these tissues which are of special interest in that they can accumulate up to 5% of the dry, fat-free weight of the citric acid.

Medical Society of the District of Columbia

Not fewer than 25 meetings of interest to medical scientists are noted in the period November 1 to December 2, as many as five in a single day. While many are highly specialized or technical, only three are designated as closed meetings, and a number range into related areas of the biological sciences.

Philosophical Society of Washington

On Friday, November 18, Dr. Alexander Rich, MIT, spoke on "The structure of biological macromolecules."

The 1500 meeting of the Society, open to the public, was held December 2, in the Natural History Museum Auditorium, and featured an address by E. U. Condon, of Washington University. A dinner at the Raleigh Hotel preceded the affair. Under the circumstances, it seems entirely appropriate to reproduce the following summary of the organization, as it appears in the program announcement; prepared by F. N. Frenkiel:

"The Philosophical Society of Washington was founded on March 13, 1871, and was incorporated on May 20, 1901, in the District of Columbia. The aims for which the Society was incorporated are "the promotion of science, the advancement of learning and the free exchange of views among its members on scientific subjects."

Since March 26, 1887, the date of the 300th meeting of the Society, the meeting place has been the Assembly Hall of the Cosmos Club, except on special occasions. Prior to the organization of the Cosmos Club in 1878 and for some nine years thereafter, meetings were held in the library of the Surgeon General's Office, Old Ford's Theater, where Lincoln was assassinated.

Meetings are now held usually on alternate Friday evenings from October to May in the John Wesley Powell Auditorium of the Cosmos Club (Entrance: 2170 Florida Avenue, N.W.). Following the scheduled programme for the evening, opportunity is given for the presentation of informal communications. Refreshments are served following adjournment of meetings.

In 1931 the Society inaugurated the Joseph Henry Lectures sponsored annually (except in 1943) by the Society in honor of its first president. In 1952 the Society inaugurated the Annual Christmas Lectures which are arranged primarily for high school and advanced junior high school students and which have been held, since 1954, in the Lisner Auditorium of the George Washington University.

On June 6, 1874, the Society adopted the rule that in the official records of the Society no title except "Mr." shall be used. This rule was amended on May 26, 1945, to include "Mrs." and "Miss." As the oldest scientific society of the Washington area, the Philosophical Society maintains many of its traditions. In April 15, 1899, the Society celebrated its 500th meeting. The 1000th meeting was celebrated on January 18, 1930. The 1500th meeting will be held on December 2, 1960.

With the exception of business transacted at the Annual Meeting in December, the Society is managed by the General Committee composed of the elected officers of the Society, four elected members-at-large, the latest two living ex-Presidents of the Society and members of the Committee on Communications. Regular meetings of the General Committee are held before each regular meeting of the Society.

Membership in the Society is open to all persons who are interested in the aims for which the Society was incorporated. A nomination for membership must be signed by three members of the Society, and accompanied by a statement of the qualifications of the candidate. The annual dues of active members were five dollars during the first thirty years of the existence of the Society. For about sixty years the dues have been reduced to three dollars. The General Committee has recommended that the dues of the Society be reinstated to five dollars in 1961. There is no entrance fee. Members of the Society are entitled to subscribe at a reduced rate to the journals published by the American Institute of Physics with which the Society is affiliated. Annual subscription to Physics Today can be obtained through the Society at a special rate of two dollars.

This year's Annual Christmas Lectures are set for December 22 and 23, on the general topic "Genes as living molecules," by G. W. Beadle of the California Institute of Technology.

The December 16th meeting was the Ninetieth Annual Meeting.

Society of American Bacteriologists, Washington Branch

The annual dinner meeting was held on November 28 at the Officer's Club of the Walter Reed Army Medical Center. Dr. Charles R. Phillips, Fort Detrick, chose the topic "The Moon, Mars, and Microorganisms." In addition to election of officers, Life Membership Certificates were awarded to William R. North, Jr., H. H. McKinney, and Katherine Alvord.

This is perhaps the place to note that the parent organization, now the Society of American Bacteriologists will very shortly become the American Society for Microbiology; presumably the local section will follow suit in due time.

Society of American Military Engineers, Washington Post

The November 21st meeting, at the Officers' Club, Naval Weapons Plant, was addressed by Dr. A. C. Mason, USGS, on "The first photogeologic study of the moon." All meetings for the current year have been in line with the "Space Exploration" theme.

ACADEMY ACTIVITIES

Board of Managers, November Meeting

The following notes are for the timely information of the membership; they are not the official minutes of the meeting. Ed.

The Board of Managers held its 532 meeting on November 15 at NBS, with President Wood presiding.

The minutes of the 531st meeting were approved.

Reporting a meeting of the Executive Committee, Dr. Wood announced that the Committee recommended the election of Samuel B. Detwiler, Jr., as Editor of the *Journal of the Washington Academy of Sciences* for 1961. He said that Chester H. Page would retire as Editor and

that Ileen E. Stewart would continue temporarily as Managing Editor. The Committee recommended the election of Frank L. Campbell, Harold T. Cook, Russell B. Stevens, and John K. Taylor as Associate Editors. He announced that Robert C. Miller of the California Academy of Sciences will talk to the Board of Managers at its February meeting. He reported that the Washington Board of Trade has been setting up a Science Bureau. This development has been discussed by the Joint Board, and Ralph Cole of Melpar will report on it to the Board of Managers at its next meeting.

Chairman Stiehler of the Meetings Committee reminded the Board of the meeting of November 17 at which E. Bright Wilson, Jr. will speak on "An Introduction to Scientific Research." This will be a joint meeting with the Junior Academy and the D. C. Chapter of Sigma Xi. He announced that Dr. Harry Wexler of the Weather Bureau will speak on recent developments in meteorology.

Chairman Hall of the Membership Committee presented for first reading the names of two candidates for membership.

There was no report from the Committee on Awards for Scientific Achievement. A. T. McPherson again recommended that the Board consider the establishment of an award in the field of earth sciences. President Wood referred this recommendation to the Committee on Policy and Planning for study and recommendation.

Secretary Specht read a letter from Chairman Van Evera of the Committee on Grants-in-Aid for research recommending that a grant of $55.00 be made to Michael Finnegan of the Fairfax High School. A letter of recommendation from the instructor, Mr. Tishler, was read. The application was approved by the Board.

Chairman A. T. McPherson of the Committee on Policy and Planning moved the adoption of the revised Standing Rules of the Academy as presented last month by Chairman Shepard of the Special Committee on Bylaws. Some discussion preceded the adoption of the standing rules by the Board.

Dr. McPherson, concerned about improving relations between the Academy and its affiliated societies, recommended that a dinner be arranged for the Presidents of the affiliated societies to discuss: (1) the production of a directory covering the members of the Academy and the affiliated societies, (2) the possibility of obtaining headquarters for the Academy large enough to be used also by some of the affiliated societies and (3) cooperation between the Academy and the affiliated societies in promoting scientific activities in this area.

In the discussion that followed it was pointed out that it would probably be impossible to assemble all the Presidents of the affiliated societies at one time. The Board agreed that this was really not necessary but that every society should be represented by a responsible officer who of course might be the delegate of the Society to the Academy. It was moved that the Academy pay the bill for this dinner. The Board voted to do so.

Elected to Academy Membership

Meyer R. Achter, Naval Research Laboratory
Frank H. Attix, Naval Research Laboratory
Louis A. Beach, Naval Research Laboratory
Peter L. Bender, National Bureau of Standards
George E. Clark, Jr., Johns Hopkins University
John R. Clement, Jr., Naval Research Laboratory
Walter D. Compton, Naval Research Laboratory
James W. Davisson, Naval Research Laboratory
Paul H. Egli, Naval Research Laboratory
Howard W. Etzel, Naval Research Laboratory
Robert J. Ginther, Naval Research Laboratory
John Mandel, National Bureau of Standards
Matthew F. M. Osborne, Naval Research Laboratory
William C. Overton, Jr., Naval Research Laboratory
William S. Pellini, Naval Research Laboratory
Edward I. Salkovitz, Office of Naval Research
Sidney T. Smith, Naval Research Laboratory
Helmut Sommer, Diamond Ordnance Fuze Laboratories
Harald W. Straub, Diamond Ordinance Fuze Laboratories
Carl I. Vigness, Naval Research Laboratory
Peter Waterman, Naval Research Laboratory

Inadvertently Dr. Shubert's opinions were reported as Dr. Watson Davis' in the report of the May meeting of the Board of Managers (page 12, column 2, paragraph 2.) The meeting reporter apologizes for this error.

THE BROWNSTONE TOWER

FRANK L. CAPBELL

Reflecting on the meaning of the word "editor", we turned to our favorite book, the English dictionary, and found as we expected, that "editor" is given more than one definition. We could wrap them all into one by defining an editor as a middleman between writers and printers. In various ways editors determine what is printed, their actions ranging all the way from application of rules of punctuations to the determination of the objectives and character of a publication.

Among those who are responsible for the pub-

lication of a scientific periodical the unmodified title "editor" should be reserved for the person who heads the whole operation, who is responsible for the organization and performance of the staff, for control of expenditures and acquisition of income, and for format and content of the periodical—all within lines laid down by representatives of those for whom the periodical is published. In brief, the "editor" should be the boss.

All scientific periodicals, whether restricted to the publication of the results of research (primary scientific publication) or open to other kinds of material of interest to scientists, can benefit by active solicitation of manuscripts by the editor and his assistants. Where demand for space is sufficient the editor of a primary scientific publication can get by without solicitation of manuscripts. He need only select, with the help of advisers, the manuscripts he thinks should be published. However, the more general the periodical the greater the desirability of soliciting the material to be published. For some journals solicitation may be a necessity for survival and growth.

The editors of the old *Journal of the Washington Academy of Sciences* were usually passive, accepting whatever manuscripts they received that seemed to be scientifically respectable. One will never know whether earlier active solicitation of manuscripts would have established and preserved an interdisciplinary research character for the *Journal*, which was probably wanted by most of the members of the Academy. Certainly, with little or no solicitation of manuscripts the *Journal* became irreparably unbalanced in the direction of descriptive science, which the majority did not want.

The transition from a passive to an active editor of the *Journal* has been taking place during the past year, after the *Journal* was changed suddenly from an archival repository of taxonomic research to the Academy's house organ. In 1961 the *Journal* will have an active editor, Samuel B. Detwiler Jr., a chemist who is a Special Assistant to the Administrator of the Agricultural Research Service, USDA. Sam is noted in the Agricultural Research Service for his capability as an organizer of complex programs of agricultural research, particularly chemical research on the utilization of farm prducts. He is noted outside of ARS as the Editor of *The Capital Chemist*, the publication of the Chemical Society of Washington that pays for itself through receipts from advertising. We predict he will become noted as the editor of the *Journal of the Washington Academy of Sciences* who caused the members to look forward to its appearance and to read it.

Some members of the Academy have queried, "Why take the time and go to the expense of publishing a *Journal* for which there is no clear demand?" Our answer is that we should not quit when demand is weak but should strive to create demand in the belief that a good *Journal* will help to make the Academy strong and useful. Sam can do it because he will set an example of hard work that his staff will emulate and that will gradually permeate the Academy.

Sam will become Editor in January 1961 under difficult circumstances, for he will be traveling in India and Southeast Asia on official business for several weeks before he takes over. Therefore in October 1960 he was setting up schedules and deadlines and allocating responsibility among the members of his staff for the contents of next year's issues. He does not want any predictions or promises to be made about these contents; he wants next year's issues to speak for themselves, hoping that the members of the Academy will recognize that they are becoming more timely and hence more useful. We can say, at least, "Don't judge the 1961 Journal by 1960 issues—we can do better."

JOINT BOARD

The Joint Board is engaged in its annual financial campaign to raise funds for its budget for the 1960-61 school year. A total of $7,500 must be obtained to carry on its program of science education.

Two major activities account for more than half of the Budget. One of these is the cost of publication of *The Reporter*. This 8-page newsletter is published monthly from October to June and is sent free to each teacher of science and mathematics in every secondary school of the Greater Washington Area. Also, school contact persons, education committee chairmen of technical societies, and others interested in science education are included in the circulation of some 2200.

The second major activity is cooperating with local school systems in underwriting expenses incurred in their operation of the five area science fairs. Printing costs for publicity materials (posters, etc.), entry blanks, record forms, and similar items are paid for by the Joint Board. In addition, the Board pays entry fees and travel expenses of contestants from three of the areas to the National Science Fair. (Expenses of this nature for the Northern Virginia fairs are provided for by the Alexandria-Arlington-Fairfax Realty Board.)

Other budgetary items include the operation of the School Contacts Program, popular lectures for school children known as the "Frontiers of Science Lectures", as well as the normal expenses concerned with operation of the Board.

There has been some confusion about the projects financed under a grant from the National Science Foundation. These funds are specifically granted for three projects: The Visiting Scientists and Engineers Program of lectures for school classes and science clubs; cooperative experimental educational programs; and a series of

conferences for teachers and the scientific community. It also provides for the maintenance of the office required to administer the program. No part of the $35,000 grant may be used for the general program of the Joint Board. It is separate and financed from locally raised funds.

The Board's Finance Committee, under the chairmanship of Dr. Russell W. Mebs, is engaged in raising the Budget for this year. Local scientific and engineering societies and private industrial, research, and business organizations are requested to contribute. Many societies provide funds for the Joint Board in their budgets. Others solicit contributions from their members at a meeting of their society. The Joint Board, however, has adopted a policy of *not* soliciting individual contributions.

Individuals may assist in several ways to further the program of the Joint Board. One of these is to see that the technical societies with which they are affiliated provide funds in their budgets for the Joint Board's program, which is being carried on in their behalf. The other is to volunteer for participation as individuals in various phases of the program. One of the most urgent needs at the present is for science fair judges. Lists are currently being prepared for use of the schools beginning in late February. Further information may be obtained from the office of the Joint Board on Science Education, 1530 P Street, N.W., Washington 5, D.C., Telephone NO. 7-3661.

SCIENCE AND DEVELOPMENT

A Pacific Science Information Center has been established at the Bishop Museum in Honolulu, Hawaii. It was established by the Pacific Science Association with the help of a grant from the National Science Foundation. Information will be gathered and made available on current activities in special fields such as human ecology, land fauna, geography of the Pacific and relevant cartographic and statistical data.

Pear decline is causing death of many pear trees in Washington, Oregon, and California. Scientists of the U. S. Department of Agriculture and the Washington and California Experiment Stations have not yet found the cause of the condition. Quick decline kills some trees in about two weeks in mid-summer or late-summer. Slow decline takes longer. The trees show little or no terminal growth, leaves are small, sparse and pale green, and there is a gradual loss of vigor, and eventually death. The malady is not connected with malnutrition, unfavorable soil condition, fungus attack, or orchard practices. It occurs on trees grown on Oriental rootstock, but not on trees grown on Bartlett rootstock. Studies are being made to determine if pear decline is caused by a virus.

The world adopted a new standard of length at 6 PM, Paris time, October 14, 1960. The new standard is a "wavelength of light." It replaces the meter bar which has served as the standard for over seventy years. The action was taken by the 11th General Conference on Weights and Measures. The American delegation to the Conference was headed by Allen V. Astin, a member of the Washington Academy of Science. Another Academy member in the delegation was A. G. McNish, Chief, Metrology Division, National Bureau of Standards. The new meter is defined as 1,650,763.73 wavelengths of the orange-red line of krypton 86. The new standard is of great importance to those engaged in precision measurements since it relates the meter to a constant of nature, the wavelength of a specified kind of light, which is believed to be immutable and can be reproduced with great accuracy in any well equipped laboratory. There was doubt in the minds of some scientists regarding the stability of the international meter bar.

Flies of the genus *Ogcodes* pass the larval stage of their lives inside spiders and devour the tissues, sometimes almost completely, apparently without much obvious awareness on the part of the doomed spider. How the fly larva gets into the spider is a matter of conjecture. Presumably, it is swallowed in a very immature stage or maybe the egg is swallowed and hatched inside the host. Once the larva is inside, the spider is doomed. The amount of feeding varies. Often only an empty shell is left. The doomed spider continues the normal activities until very near the end, but usually at a considerably reduced rate. When the larval stage is about over, the parasite eats a hole through the spider's abdomen, escapes to the outside world and eventually leads a normal adult fly existence.

Unusual recordings of infrasonic disturbances in the atmosphere have been reported by the National Bureau of Standards. This is believed to be the first time the relation between sources of infrasonic waves generated in the atmosphere and the incident sound pressure, the direction of approach of the incident wave, and the speed of the wave across the earth's surface have been studied quantitatively. A system of detectors of the type used in this study could track tornadoes and could probe upper atmospheric disturbances, especially interactions of the sun and the earth's magnetic field. These studies were begun under the late *Peter Chrzurowski*, a member of the Washington Academy of Science.

The U. S. Coast and Geodetic Survey has achieved a spectacular degree of accuracy in earth measurement. With unprecedented

precision the Survey succeeded in tying a network of nine missile tracking ballistic cameras, spread over an area of 4,000 square miles, with the launching site at Cape Canaveral, Florida, to pinpoint tracking of space missiles and flares against a background of stars. The camera sites were calculated to within an average probable error of about 0.2 feet with respect to a fixed point at Cape Canaveral, achieving an accuracy of better than one to 1,000,000, or 1/16 of an inch in one mile. The precision of the instruments, superior advance planning for the project, and the highly refined skills of the field engineers combined to produce a degree of accuracy in geodetic measurements hertofore unattained anywhere.

The tracking, warning and forecasts during the passage of Hurricane Donna were the most complete in history according to Dr. F. W. Reichelderfer, Chief of the Weather Bureau, Department of Commerce. If this most destructive and vicious hurricane since 1886 had occurred 5 years ago hundreds of people in the United States might have lost their lives and thousands more would have been seriously injured. From the time Donna was sighted 1,200 miles east of Puerto Rico, the Weather Bureau hurricane warning centers in San Juan, Miami, Washington and Boston issued over 90 advisories and bulletins on the storm's progress. Much of the success in tracking the hurricane was made possible by the high powered weather radar installed in 1959 and 1960 along the Gulf and Atlantic Coasts and the dozens of missions flown by the Weather Bureau's National Hurricane Research Project's aircraft.

A fish with a "lamp" inside its mouth is a prize specimen collected by the Danish oceanographic ship Galathea. It was collected from a depth of two and a half miles in the mid-Pacific and has been named *Galatheatharuna axeli*. It is an aberant member of the coldly predaceous anglerfish group and lives far below the deepest penetration of light. Some fish of this group carry luminous organs on stalks protruding from the head region. The lights are used to attract other mid-depth organisms close to the mouth where they can be trapped by the big sharp teeth and swallowed. This creature is unique in having the light inside the mouth. It rests on the bottom in the darkness with the mouth wide open.

An analysis of spectrograms obtained by photographing the planet Jupiter has been completed at the National Bureau of Standards. The first detailed measurements were made of lines in Jupiter's ammonia and methane bands. The presence of the hydrogen molecule was detected from its quadruple rotation-vibration spectrum. A continuous absorption recorded in the violet and ultraviolet regions closely resembles that of the nitrogen tetroxide molecule. Spectrograms were recorded from 3600 to 3900 A, using high-dispersion gratings.

Formal organization of the Science Information Exchange within the Smithsonian Institution was announced on September 28 by Leonard Carmichael, secretary of the Institution. Basic purpose of the group is "to foster and facilitate effective planning and management of scientific research activities supported by United States agencies and institutions by promoting the exchange among participating agencies of administrative data about all types of current research . . ." Sponsoring agencies are PHS, Defense, NSF, Veterans Administration, NASA, AEC, and the Smithsonian. For the coming year Orr Reynolds is chairman of the Governing Board and Lyndon Lee is vice chairman. Staff direction is Stella L. Deignan, director of the former Biological Sciences Information Exchange, of which the new group represents an expansion.

"Invisible fishes" whose bodies are as translucent as the clearest glass are described by Leonard P. Schultz, Smithsonian Institution curator of fishes, in a comprehensive recent report on the fish life around the Marshall and Marianas Islands. Members of the family Trichonotidae, they are called "sand divers" because, says Dr. Schultz, that is exactly what these fishes are. One to two inches long, they spend their lives entirely buried in loose coral sand at the sea bottom. Through this sand they apparently make their way as easily as other fishes can through water. They are extremely difficult to attract to the surface. They have hairy fringes around the lips that keep the sand out of their mouths.

Electronic digital computers will be used by Coast and Geodetic Survey for the more accurate location of the origin of earthquakes. The new system requires that the data reported from some of the 200 earthquake stations in the world-wide network be punched on standard business machine cards; the coding process includes the name of the reporting station and the exact time that the first shock wave was recorded. It is believed that this method will eventually be accurate to within seven miles of the point of origin.

Two new research groups have been set up by Coast and Geodetic Survey as part of a major shift in program emphasis. An Office of Research and Development has been established to pursue basic research in the earth science fields of the Survey's work, and coordinate and assist in applied research and development conducted by technical divisions in its field of competence. A new Office of Oceanography will be responsible for a comprehensive program of oceanographic surveys, and a broad complex of related programs related to the sea as one of man's major environmental elements.